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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/751,047	12/29/2000	Suk H. Cho	09143-012001	8973

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EXAMINER

KUMAR, PREETI

ART UNIT	PAPER NUMBER
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1751

DATE MAILED: 10/23/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/751,047

Applicant(s)

CHO ET AL.

Examiner

Preeti Kumar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on July 2, 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 56-78 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 56-78 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Claims 1-55 are canceled. Claims 56-78 are pending.
2. The rejections and objections made in the office action dated January 25, 2002 are withdrawn in light of applicant's amendment and cancellation of claims 1-55.

Response to Arguments

3. Applicant's arguments filed on July 2, 2002 in paper # 7, have been fully considered, but are rendered moot in view of the cancellation of claims 1-55.

New Grounds of Rejection

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 56-60 and 63-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ospinal et al. (US 5,965,508) in view of Sherry et al. (US 5,962,388).

Ospinal et al. teach compositions that may be used to produce a transparent dish washing gel, paste or solution, or further applications such as are apparent to one skilled in the art. See col.7, ln.55-65.

Specifically regarding claims 74-76, Ospinal et al. teach that the soap compositions will preferably be formulated such that they will have a pH of between about 4.0 and about 10.0, more preferably between about 5 and about 9.5. Techniques for controlling pH at recommended usage levels include the use of buffers, alkali, acids, etc., and are well known to those skilled in the art. See col.9, ln.44-49.

Specifically regarding claim 64, Ospinal et al. teach ingredients for use in the compositions include detergent builders, cellulase enzymes, softening clays, smectite-type softening clays, polymeric clays, flocculating agents, dye transfer inhibitors, and optical brighteners. See col.14, ln.25-32. Optional pH adjusting agents are may be citric acid. See col.13, ln.19.

Regarding the use of thickeners, Ospinal et al. teach the present compositions may further comprise from about 1% to about 5% by weight paraffin. The compositions also optionally may further comprise additional ingredients including from about 0.5% to about 10% by weight of a sucroglyceride, a functional metallic soap, a succinamate, a sulfosuccinamate, a mono-, di-, or triglyceride, chitosan, or a mixture thereof. Similarly, the compositions may further comprise from about 0.1% to about 10% by weight of fragrance, emollients, moisturizers, viscosity control agents, as well as additional agents

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appropriate for incorporation into a composition of the invention and which are known to those skilled in the art. See col.7, ln.44-48.

Specifically regarding claims 63 and 65, Ospinal et al. teach that polyols, such as glycerin, may be incorporated in the compositions in an amount from about 0.5% to about 5.0% by weight of glycerine or polyol; preferably from about 1.0% to about 3.0%, more preferably, from about 1.0% to about 1.8%. The useful polyols of the present invention are generally liquid water-soluble aliphatic polyols or polyethylene glycols or polypropylene glycols. See col.14, ln.33-40. The polypropylene glycol compounds useful in this invention may range from dipropylene glycol to polypropylene glycols having a molecular weight of about 2000. See col.14, ln.63-65. See also col.11-12 in its entirety.

Specifically regarding claims 77 and 78, Ospinal et al. teaches a calcium ion source from about 30% to about 99% by weight of a mixture of an anionic surfactants comprising i) an alpha sulfonated alkyl ester of the formula as recited in col.3, ln.55 wherein R1 is a C6 -C22 hydrocarbyl, preferably an alkyl, or combination thereof, R2 is a straight or branched chain C1 -C6 hydrocarbyl, preferably an alkyl, or combination thereof, and M is hydrogen or sodium, potassium, calcium, magnesium, monoethanolamine, diethanolamine, triethanolamine, or a mixture thereof; and ii) a sulfonated fatty acid of the formula as recited in col.4, ln.5 wherein R1 is a C6 -C22 hydrocarbyl, preferably an alkyl, or combination thereof, and M is hydrogen and/or sodium, potassium, calcium, magnesium, monoethanolamine, diethanolamine, triethanolamine, or a mixture thereof; and another calcium ion source from about 0.5%

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to about 50% by weight of a fatty acid of the formula as recited in col.4, ln.20 wherein R1 is a C6 -C22 hydrocarbyl, preferably an alkyl, or combination thereof, and M is hydrogen and/or sodium, potassium, calcium, magnesium, monoethanolamine, diethanolamine, triethanolamine, or a mixture thereof. See col.3-4.

Ospinal et al. do not specifically teach a dishwashing detergent composition comprising a xanthan gum and a protease and having the specific activities as recited by the instant claims 56 and 59-60. Also, Ospinal et al. do not specifically teach the performance in the standard wash test, as recited by the instant claims 66-73.

Sherry et al. teach aqueous detergent compositions and hard surface cleaning compositions, which contain alkyl aryl sulfonate surfactant, selected hydrophobic cleaning solvent, polycarboxylic acid, and aqueous solvent system in solution and/or a micellar phase, the pH being from about 2 to about 4. They have excellent soap scum removal and hard water deposit removal properties and are easy to rinse. Such compositions optionally contain additional anionic sulfate surfactant, cationic surfactant, peroxide and/or hydrophilic polymer for additional benefits.

Non-limiting examples of other adjuncts are: enzymes such as proteases; hydrotropes such as sodium toluene sulfonate, sodium cumene sulfonate and potassium xylene sulfonate; thickeners at a level of from about 0.01% to about 0.5%, preferably from about 0.05% to about 0.4%; and aesthetic-enhancing ingredients such as colorants, providing they do not adversely impact on filming/streaking. See col.9, ln.40-45.

Hydrophilic polymers have also been shown to mitigate the surface spotting caused by surfactants, especially for compositions that additionally include quaternary ammonium surfactant. Preferred hydrophilic polymers to be used in conjunction with compositions of the present invention include xanthan gum. The level of polymer desired to achieve the desired benefits is from about 0.001% to about 0.10%. The specific level of polymer depends on the formulators objective. Thus, while improved sheeting results from increased level of polymer, it is also found that hard water removal performance deteriorates. See col.6, ln.35-55.

Specifically regarding claims 66-73, the Examiner asserts that the broad teachings of Ospinal et al. in combination with Sherry et al. would encompass compositions comprising enzymes, having the same activities as recited by the instant claims since Sherry et al. teach acidic detergent compositions containing protease enzyme and Ospinal et al teach acidic detergent compositions containing enzymes in general in the same proportions as recited by the instant claims.

It would have been obvious, to one of ordinary skill in the art, at the time the invention was made, to formulate a liquid dishwashing detergent having a pH value less than about 6.8 and further comprising the other requisite components of the detergent composition in the specific proportions as recited by the instant claims, with a reasonable expectation of success, because the broad teachings of Ospinal et al. in combination with Sherry et al. suggest a liquid detergent composition formulated in such a manner as to have a pH of less than 6.8 and comprising protease enzyme and

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xanthan gum and the other requisite components of the detergent composition in the same proportions as recited by the instant claims.

Further, one of ordinary skill in the art would have been motivated to combine the teachings of Sherry et al. with Ospinal et al. because Ospinal et al. teach the use of thickeners and enzymes in acidic detergent compositions in general and Sherry et al. suggest the use of xanthan gum and protease enzyme in an acidic detergent composition for enhanced removal of soap scum and hard water deposits.

7. Claims 61 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ospinal et al. (US 5,965,508) as applied to claims 56-60 and 63-78 above, and further in view of Gray et al. (US 5,269,960).

Ospinal et al. are relied upon as set forth above. However, Ospinal et al. do not specifically teach the utility of an amylase enzyme in an acidic detergent composition as recited by the instant claims.

Gray et al. teach the equivalence of the utility of amylase enzyme and protease enzyme in an acidic detergent composition. Gray et al. teach a phase stable liquid, aqueous enzyme detergent which maintains phase stability at prolonged storage and elevated temperatures, comprising: a) at least 5% of a nonionic surfactant having an HLB of 10-16 and a pour point less than about 40°C.; b) at least 1% of a C10-16 alkyl ether sulfate, which contains 1-5 moles of ethylene oxide per mole of alcohol; c) at least 0.5% of a C8-18 alkyl ether carboxylate, which contains 1-20 moles of ethylene oxide per mole of alcohol, said compound used as a phase stabilizer; d) at least 0.1%, but not greater than 5%, of an unsaturated C10-20 fatty acid or salt thereof, which is used as a

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foam controller; e) a mixture of a lower alkanol solvent with a lower glycol, said solvents in a ratio of about 10:1 to 1:10; f) at least 0.01% of a protease, an amylase, or a mixture thereof; g) at least 0.01 of a soluble calcium salt which effectively stabilizes against enzyme deactivation; and h) the balance, water. See col.3, ln.27-50.

Specifically regarding pH, Gray et al. teach that the pH of the invention varies from about 6-9. And further suggests that in order to attain the pH, the pH can be adjusted by the use of various buffers. See col.8,ln.55-60.

Specifically regarding enzymes, Gray et al. suggest the use of amylase and proteases and teaches the preferable use of amylase/protease blends in the acidic detergent composition. See col.8,ln.10-30.

It would have been obvious, to one of ordinary skill in the art, at the time the invention was made, to formulate a liquid dishwashing detergent having a pH value less than about 6.8 and further comprising an amylase enzyme in the specific proportions as recited by the instant claims, with a reasonable expectation of success, because the broad teachings of Ospinal et al. in combination with Gray et al. suggest a liquid detergent composition formulated in such a manner as to have a pH of less than 6.8 and comprising amylase enzyme in the same proportions as recited by the instant claims. Further, one of ordinary skill in the art would have been motivated to combine the teachings of Gray et al. with Ospinal et al. because Ospinal et al. teach the use of enzymes in acidic detergent compositions in general and Gray et al. suggest the use of specific amylase and protease enzymes in an acidic detergent composition.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Preeti Kumar whose telephone number is 703-305-0178. The examiner can normally be reached on M-F 9:00am - 5:30pm.

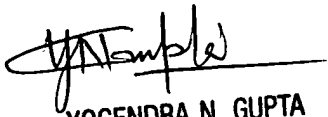
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra N. Gupta can be reached on 703-308-4708. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-872-9309.

Preeti Kumar
Examiner
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PK
October 18, 2002


YOGENDRA N. GUPTA
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